

REMARKS

In view of the foregoing amendments and the following remarks, Applicants respectfully request reexamination of the present application. Claims 1, 5-7 and 16-18 have been amended, Claim 4 has been cancelled and new Claim 46 has been added.

Specifically, Claim 1 has been amended to incorporate the limitation of Claim 4, Claim 4 has been cancelled and Claims 5-7 and 16-18 have been amended to be consistent therewith. New Claim 46 is old Claim 14 rewritten in independent form.

Applicants note with appreciation that the Examiner has allowed Claims 19-44. Applicants also note that Claims 4-6 and 14-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims. Applicants believe that Claim 7 should also be included in this group and request clarification if this is not the case.

The Examiner has rejected Claims 1-2, 11 and 45 under 35 U.S.C. 102(e), as being anticipated by U.S. Patent Publication No. US 2003/0227701 by Clinton et al. Regarding Claims 1 and 45, the Examiner states that Clinton et al. disclose a magnetic recording device, comprising a perpendicular write head (Fig. 2, 10; paragraph 32) comprising a write head having a write pole tip (Fig. 2, 12) and a return pole (Fig. 2, 14); and a recording medium comprising a longitudinal magnetic recording layer (Fig. 2, 24, 30; paragraph 32) and a soft magnetic underlayer disposed under the recording layer (Fig. 2, 26; paragraph 32), wherein during operation of the magnetic recording device the longitudinal recording layer is disposed in relation to the perpendicular write head to place the magnetic recording layer within an effective write gap formed by the perpendicular write head and the underlayer (this says the same thing as element (d) of claim 45; see Fig. 2 & paragraph 32). The Examiner states that it is inherent in dynamic magnetic recording that the longitudinal recording layer move relative to the write head.

Applicants have amended Claim 1 to incorporate the limitation of Claim 4. As Claim 4 has been objected to as being dependent upon a rejected base claim but would be allowable if rewritten in independent form, it is respectfully submitted that independent Claim 1 is now allowable over the prior art of record, and removal of this rejection is requested.

Regarding Claim 2, the Examiner states that Clinton et al. disclose that the perpendicular write head is a shielded pole write head comprising a write shield (paragraph 49 & Fig. 8).

Regarding Claim 11, the Examiner states that Clinton et al. disclose that the soft magnetic underlayer has a thickness sufficient to prevent saturation of the underlayer by the perpendicular write head (this is shown through disclosing that the SUL “pulls” the magnetic field through the recording medium).

Each of Claim 2 and Claim 11 depends upon Claim 1. Claim 1 has been amended to incorporate the limitation of Claim 4, and therefore it is respectfully submitted that Claims 2 and 11 are also allowable over the prior art of record. Therefore, removal of these rejections is requested.

The Examiner has rejected Claim 3 under 35 U.S.C. 103(a) as being unpatentable over Clinton et al. as applied to Claim 1 above, and further in view of U.S. Patent No. 6,807,027 by McGeehin et al. The Examiner states that Clinton et al. disclose the limitation at Claim 1 as discussed above and that they do not disclose that the perpendicular write head is a monopole write head. McGeehin et al. teach this feature (Fig. 1, 26). The Examiner states that it would have been obvious to one of ordinary skill in the art at the time of Applicant’s invention to use a monopole write head in Clinton et al. in place of a shielded pole write head; motivation being reducing the size of the head.

The Examiner has rejected Claims 8-10 and 12-13 under 35 U.S.C. 103(a) as being unpatentable over Clinton et al. as applied to Claim 1 above, and further in view of U.S. Patent No. 5,041,922 by Wood et al.

Regarding Claim 8, the Examiner states that Clinton et al. disclose the limitations at Claim 1 as discussed above and that Clinton et al. do not disclose that the soft magnetic underlayer comprises NiFe. The Examiner states that Wood et al. teach this limitation in the context of a recording medium having a longitudinal recording layer overlying a soft magnetic underlayer (Col. 6, line 36; see also Fig. 2 for structure of the layers of the medium). The Examiner states that it would have been obvious to one of ordinary skill in the art at the time of Applicant’s invention to use NiFe as the material for the soft magnetic

underlayer in Clinton et al.; motivation being effecting transfer of the flux between the head and the magnetic recording layer (Wood et al., Col. 6, lines 27-29).

Regarding Claim 9, the Examiner states that Clinton et al. do not disclose that the soft magnetic underlayer has a magnetic coercivity of not greater than about 5 Oersteds. The Examiner states that Wood et al. teach this limitation as well (Col. 8, lines 65-67). The Examiner states that it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to have a low coercivity soft magnetic underlayer in Clinton et al.; motivation being effecting transfer of the flux between the head and the magnetic recording layer (Wood et al., Col. 6, lines 27-29).

Regarding Claim 10, the Examiner states that Clinton et al. do not disclose that the soft magnetic underlayer has a magnetic permeability of at least about 50. The Examiner also states that Wood et al. teach this limitation (Col. 8, line 68 – Col. 9, line 2). The Examiner states that it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to have a high permeability soft magnetic underlayer in Clinton et al., motivation being effecting transfer of the flux between the head and the magnetic recording layer (Wood et al., Col. 6, lines 27-29).

Regarding Claims 12-13, the Examiner states that Clinton et al. do not disclose that the soft magnetic underlayer has a thickness of at least about 30 nm and that Wood et al. teach this limitation (Col. 8, lines 61-62). The Examiner states that it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to have a soft magnetic underlayer with a thickness of from about and at least 30 nm to 200 nm in Clinton et al.; motivation being effecting transfer of the flux between the head and the magnetic recording layer (Wood et al., Col. 6, lines 27-29).

Each of these claims depends upon independent Claim 1. Independent Claim 1 has been amended to incorporate the limitation of Claim 4 as is discussed above. Therefore, removal of these rejections is respectfully requested.

The fee for the additional claims (large entity) is calculated below:

For	Claims Remaining After Amendment	Highest Number Previously Paid For		Extra Claims	Rate		Additional Fee
Total Claims	45	-45	=	0	x \$	=	\$0
Independent Claims	5	-4	=	1	x \$200	=	\$200
Multiple Dep. Claim		-		\$290		=	\$
Total Fee						=	\$200

A check in the amount of \$200 for the payment of this fee accompanies this response. Please charge any underpayment and credit any overpayment to Deposit Account No. 50-1419.

Applicants believe that all pending claims are in condition for allowance and such disposition is respectfully requested. In the event that a telephone conversation would further prosecute and or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,

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